REMARKS

This amendment is responsive to the Office Action dated August 12, 2004. Applicants have not amended any of the claims. Claims 1, 3-17 and 21-32 are pending.

In the Office Action, the Examiner allowed claim 29.

The Examiner rejected claims 1-6, 11-17, 21-28 and 30-32 under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 5,202,880) in view of Lewis et al. (US 4,519,065), Davis (WO 00/48171) and Ueda et al. (US 5,481,530).

The Examiner rejected claim 7 under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 5,202,880) as modified by Lewis et al. (US 4,519,065), Davis (WO 00/48171), and Ueda et al. (US 5,481,530), and further in view of Anderson et al. (US 4,304,806).

The Examiner rejected claims 8-10 under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 5,202,880) as modified by Lewis et al. (US 4,519,065), Davis (WO 00/48171) and Ueda et al. (US 5,481,530), and further in view of Kirino et al (US 5,703,855).

Applicants respectfully traverse all of these rejections. The applied prior art fails to disclose or suggest the features of Applicants' claims. Moreover, the applied prior art lacks any motivation that would have led a person of ordinary skill in the art to make the modifications to Lee, as suggested by the Examiner. Applicants respectfully request reconsideration in view of the following comments.

Applicants' claim 1 recites a data storage medium comprising a first layer comprising a substrate, a second layer including a photopolymer, the second layer exhibiting surface variations, and a third layer comprising a thin film stack of a plurality of sub-layers that together form a magnetic recording structure, the thin film stack of the third layer including an underlay to improve growth of microstructures of the sub-layers of the thin film stack during fabrication, a magnetic recording material, and a hard coat, wherein each of the sub-layers of the thin film stack substantially conforms to the surface variations of the second layer, and wherein the third layer including the thin film stack forms a substantially continuous layer over the surface variations. All of the other rejected independent claims recite at least these features.

In the Office Action, the Examiner argued that a 2P substrate having grooves in its surface, as taught by Lee, is equivalent to Applicants' claimed first layer and second layer including a photopolymer and exhibiting surface variations. Accordingly, the Examiner is

reading substrate layer 110 of Lee as being the same as the first and second layers of Applicants' claims. The Examiner cited Ueda to support this position.

The Examiner noted that Lee further discloses a reflective layer 120 on the substrate layer 110, a dielectric layer 130 on the reflective layer 120, a recording layer 140 on the dielectric layer 130, and a protective layer 140 on the recording layer. The Examiner further noted that Lee discloses Aluminum (Al) as a suitable material for reflective layer 120.

The Examiner then noted that Lewis discloses a recording medium that utilizes a reflective layer for the purpose of reflecting light, and that Lewis discloses Al, Cr, Fe, Sn, In, Ag, Au and alloys thereof as suitable reflective layers. The Lewis reference is related to "embossable media" such as optically reflective or capacitive media, and appears to be of little relevance to magneto-optic media as taught by Lee.

Based on the fact that Lewis discloses Cr and "alloys thereof" as suitable reflective materials, the Examiner concluded that a person of ordinary skill in the art would have been motivated to use Cr alloy as a reflective layer 120 of the medium of Lee. The Examiner failed to explain why a person of ordinary skill in the art would have found it necessary to replace Al as the reflective layer. That is, it is totally unclear why a person of ordinary skill in the art would have undertaken any modification to the Lee reference to replace an Al layer with a Cr alloy, as suggested by the Examiner. Nothing in any of the applied references suggests that the Al reflective layer 120 of Lee would be deficient in any way for creating the media contemplated by Lee, and nothing in the applied references suggests why a Cr alloy would have been desirable as a substitute or improvement to the media of Lee.

The Examiner also stated that Davis teaches a magneto-optic storage disk that is manufactured by placing a magneto-optic storage layer between a reflective metal and a protective layer. Applicants are generally confused as to why the Examiner is citing Davis, as it appears to add nothing beyond the similar teaching of Lee, addressed above.

The Examiner acknowledged that Applicants' claims require an underlay to improve growth of microstructures of the sub-layers of the thin film stack during fabrication. However, the Examiner argued that a Cr alloy inherently meets this limitation. In other words, having substituted the Al reflective layer 120, as taught by Lee, with a Cr alloy layer as taught by Lewis, the Examiner argued that the structural aspects of a Cr alloy would achieve the functionality of

improving microcrystalline growth, as required by claim 1. The Examiner cited Applicants' own disclosure and claim 21 to support this position. Thus, the Examiner is arguing that having substituted a Cr Alloy for the Al layer in the Lee medium, the Cr Alloy layer would then function as a underlay to improve growth of microstructures of the sub-layers in the modified Lee medium. The Examiner does not address why a person of ordinary skill in the art would have desired an underlay in the Lee medium.

In summary, the Examiner's position appears to be that a person of ordinary skill in the art would have been motivated to eliminate the Al reflective layer, as specifically taught by Lee, and replace the Al reflective layer with a Cr alloy layer, as taught by Lewis in view of the teaching of Davis. Having made this modification, the Examiner argues that the structural aspects of the Cr alloy would inherently provide the functionality of an underlay that improves microcrystalline growth, as required by claim 1.

In response to the Examiner's analysis, Applicants respectfully submit that the Examiner's conclusion of obviousness is improper. In particular, Applicants respectfully submit that a person of ordinary skill in the art would not have been motivated to make the modifications to Lee in view of Lewis, as suggested by the Examiner. Nothing in the prior art would have led a person of ordinary skill in the art to undertake such modifications to Lee. The mere fact that Lewis discloses a Cr alloy as a suitable reflective layer would not have led a person of ordinary skill in the art to question the usefulness of an Al reflective layer of Lee, and/or undertake the modifications proposed by the Examiner.

Lee appears to provide a very adequate solution to the need for a reflective layer insofar as Lee discloses an Al reflective layer. Therefore, it is totally unclear why a person of ordinary skill in the art would have had a need or desire to undertake any modification to the reflective layer of Lee to use the Cr alloy of Lewis. On the contrary, a person of ordinary skill in the art would have found no need to replace an Al layer of Lee with a Cr alloy.

Moreover, Applicants believe that the Lewis and Lee references are totally unrelated, with totally different objectives and totally different goals. Lee is related to magneto-optic media, whereas Lewis is related to embossable media that can be used for creating optically reflective media or conductive media. With an abundance of data storage media available to a person of ordinary skill in the art, it is dubious whether a person of ordinary skill in the art would have

even given the teaching of Lewis any consideration, when confronted with the media of Lee. Applicants submit that a person of ordinary skill in the art would not have even considered Lewis relevant to the media of Lee.

In the Examiner's analysis, the Examiner is arguing that a person of ordinary skill in the art would have been motivated to modify the teaching of Lee to use a Cr alloy of Lewis to replace an Al reflective layer of Lee. But why?

The Examiner argues that the reason the person of ordinary skill in the art would have been motivated to modify the teaching of Lee to use a Cr alloy of Lewis to replace an Al reflective layer of Lee is because Lewis teaches that Cr alloys and Al are both suitable reflective materials. However, this begs the question of why a person of ordinary skill in the art would have wanted to modify Lee in the first place. The prior art suggests no need for the modification.

Accordingly, Applicants submit that a person of ordinary skill in the art would not have been motivated to undertake the modifications to Lee as suggested by the Examiner. The only reasonable explanation of why the Examiner has proposed a modification of the reflective layer of Lee, is a hindsight-based desire to reconstruct Applicants' invention from the prior art, which is improper.

With regard to dependent claim 11, Applicants respectfully submit that Lee clearly does not show surface variations that comprise protrusions. Lee shows grooves, not protrusions. Surface variations that form grooves are clearly not protrusions, as recited in claim 11. Grooves are a form of depression, not protrusion, and the Examiner's rejections of claim 11 are improper for this reason. Claim 9 recites machine readable "data bumps," which also clearly distinguish the "grooves" of Lee.

With regard to the numerous other features recited in Applicants' claims, Applicants reserve further comment at this time, but do not acquiesce to any of the Examiner's rejections or characterizations of the prior art. Applicants respectfully believe that the Examiner has simply reconstructed a wide variety of Applicants' features using Applicants' claims as a blueprint. Although the Examiner has gone to great lengths to address various features of Applicants' claims, Applicants respectfully believe that the Examiner have failed to identify the required motivation in the prior art that would have led a person of ordinary skill to undertake the numerous modifications proposed by the Examiner. In particular, the Examiner has identified no

reason why a person of ordinary skill in the art would have been led to modify the teaching of Lee, particularly with regard to the substitution of an Al reflective layer with a Cr alloy, but also with respect to many other features of various dependent claims.

However, at this time, Applicants reserve further comment on the dependent claims and the other features of the independent claims. Applicants believe that all pending claims should be withdrawn in view of the forgoing comments. Applicants respectfully request reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 09-0069. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date: 11/12/4

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